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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,986	01/29/2004	Ok-Kyung Cho	1021.43452X00	2792
20457 7590 05/29/2008 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			EXAMINER WINAKUR, ERIC FRANK	
			ART UNIT 3768	PAPER NUMBER
			MAIL DATE 05/29/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Notice of Allowability**

Application No.

10/765,986

Applicant(s)

CHO ET AL.

Examiner

Art Unit

Eric F. Winakur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date See Continuation Sheet
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_.

Continuation of Attachment(s) 3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date: 1/29/04; 5/3/04; 12/16/04; 3/16/05; 4/15/05; 6/6/05, 6/6/04

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1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Alan Schiavelli on 5 January 2007. Applicant agreed to amend claims 12 and 16 to more clearly set forth the relationship between the stored information regarding the blood hemoglobin concentration and oxygen saturation and the calculation of the blood sugar level.

The application has been amended as follows:

Claim 12 was amended as follows:

12. A blood sugar level measuring apparatus comprising:

an ambient temperature measuring unit for measuring ambient temperature;

a body-surface contact portion with which a body surface comes into contact;

a radiation heat detector for measuring radiation heat from said body surface;

a heat-conducting member disposed adjacent to said body-surface contact portion;

an indirect temperature detector disposed adjacent to said heat-conducting member and away from said body-surface contact portion, for detecting the temperature at a position distanced from said body-surface contact portion;

a first storage portion in which information about blood hemoglobin concentration and hemoglobin oxygen saturation is stored;

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an arithmetic portion including a converting portion for converting the outputs of said indirect temperature detector, said ambient temperature measuring unit and said radiation heat detector into a plurality of parameters, and a processing portion in which a relationship between said parameters, said blood hemoglobin concentration and said hemoglobin oxygen saturation, and a blood sugar level is stored, said processing portion being adapted to calculate a blood sugar level by applying said parameters to said relationship; and

a display portion for displaying the blood sugar level outputted from said arithmetic portion.

Claim 16 was amended as follows:

16. A blood sugar level measuring apparatus comprising:

an ambient temperature measuring unit for measuring ambient temperature;

a body-surface contact portion with which a body surface comes into contact;

a heat-conducting member disposed adjacent to a first area of said body-surface contact portion;

an indirect temperature detector disposed adjacent to said heat-conducting member and away from said body-surface contact portion, for detecting the temperature at a point distanced from said body-surface contact portion;

a tubular member disposed adjacent to a second area of said body-surface contact portion, one end of said tubular member being open;

a radiation heat detector disposed adjacent to the other end of said tubular member, for measuring radiation heat from said body surface;

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a first storage portion in which information about blood hemoglobin concentration and hemoglobin oxygen saturation is stored;

an arithmetic portion including a converting portion for converting the outputs of said indirect temperature detector, said ambient temperature measuring unit and said radiation heat detector into a plurality of parameters, and a processing portion in which a relationship between said parameters, said blood hemoglobin concentration and said hemoglobin oxygen saturation, and a blood sugar level is stored in advance, said processing portion being adapted to calculate a blood sugar level by applying said parameters to said relationship; and

a display portion for displaying the blood sugar level outputted from said arithmetic portion.

2. The following is an examiner's statement of reasons for allowance: Applicant cites several references related to measurement of analyte concentrations. Of particular relevance, Oosta et al. (USPN 5,725,480) teach use of temperature measurements, among other factors, to calibrate optical glucose measurements based upon a subject's skin type. Cho (WO 01/28414) suggests determining glucose concentrations based upon analysis of temperature and spectral measurements. However, the prior art does not teach or suggest a blood sugar level measuring apparatus that includes a measuring arrangement that obtains a plurality of temperatures from a subject's body surface and an arithmetic portion for converting measurement values provided from the temperature measurements into parameters which are used for computing a blood sugar level based on a stored relationship that

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accounts for blood hemoglobin concentration and oxygen saturation based upon stored information, in combination with the other claimed elements.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric F. Winakur whose telephone number is 571/272-4736. The examiner can normally be reached on M-Th, 7:30-5; alternate Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571/272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Eric F Winakur  
Primary Examiner  
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